



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/828,546	04/19/2004	Kern W. Wong	P05310C1	3883
23990	7590	10/06/2005	EXAMINER	
DOCKET CLERK			LAXTON, GARY L	
P.O. DRAWER 800889			ART UNIT	
DALLAS, TX 75380			PAPER NUMBER	
			2838	

DATE MAILED: 10/06/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/828,546

Applicant(s)

WONG ET AL.

Examiner

Gary L. Laxton

Art Unit

2838

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 15 July 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 23-45 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 23,24 and 27-45 is/are rejected.
- 7) ☒ Claim(s) 25 and 26 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

Response to Arguments

1. Applicant's arguments with respect to claims 23-45 have been considered but are moot in view of the new ground(s) of rejection.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claim 23 is rejected under 35 U.S.C. 103(a) as being unpatentable over Harris (US 6,362,612) in view of Roh (US 6,509,726).

Harris discloses a bandgap reference circuit having a current source (M2); a circuit branch (R2, Q2) with positive and negative temperature coefficients as claimed; further base emitter diode (Q1); adjustment circuit (120).

However, Harris does not disclose a startup circuit.

Roh, figure 2, teaches that it is old and well known to provide a reference voltage generating circuit including a startup circuit (30) connected to the input of an adjustment circuit (12) for ensuring proper startup of the bandgap reference circuit.

Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify Harris to include a startup circuit to ensure the proper startup of the bandgap reference circuit.

4. Claim 24 is rejected under 35 U.S.C. 103(a) as being unpatentable over Harris (US 6,362,612) and Roh (US 6,509,726) in view of Yu (US 5,867,013).

Harris and Roh disclose the claimed subject matter in regards to claim 23 supra except for the startup circuit injects a current into the emitter of the further base emitter diode.

Yu teaches a bandgap reference circuit having a startup circuit (44) connected to an input of an adjustment circuit (32) for injecting a starting current in the emitter of a further base emitter diode (40) to ensure a proper startup of the bandgap reference circuit.

Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify Harris and Roh to operate the startup circuit to inject a current into the emitter of the further base emitter diode as taught by Yu to ensure a proper startup of the bandgap reference circuit.

5. Claim 27 is rejected under 35 U.S.C. 103(a) as being unpatentable over Harris (US 6,362,612) and Roh (US 6,509,726) in view of King et al (US 5,471,131).

Harris and Roh disclose the claimed subject matter in regards to claims 23 and 28 supra except for a correction circuit for offsetting a voltage drop in the bandgap circuit.

King et al teaches using a correction circuit for correcting a voltage drop in a bandgap circuit.

Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify Harris to include a correction circuit for correcting a voltage drop in the bandgap reference circuit in order to produce the proper voltage at the output of the reference circuit as taught by King et al.

6. Claims 28, 29, 33 and 36 are rejected under 35 U.S.C. 103(a) as being unpatentable over Harris (US 6,362,612) in view of Marty (US 6,445,167).

Harris discloses a bandgap reference circuit having a current source (M2); a circuit branch (R2, Q2) with positive and negative temperature coefficients as claimed; further base emitter diode (Q1); adjustment circuit (120).

However, Harris does not disclose a startup circuit.

Marty a regulator circuit including a startup circuit (20) connected to the output of an adjustment circuit (5) for ensuring proper startup of the regulator circuit.

Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify Harris to include a startup circuit to ensure the proper startup of the circuit as taught by Marty.

7. Claims 30, 31, 34 and 35 are rejected under 35 U.S.C. 103(a) as being unpatentable over Harris (US 6,362,612) and Marty (US 6,445,167) in view of Yu (US 5,867,013).

Harris and Marty disclose the claimed subject matter in regards to claim 28 supra except for the startup circuit injects a current into the emitter of the further base emitter diode.

Yu teaches a bandgap reference circuit having a startup circuit (44) connected to an input of an adjustment circuit (32) for injecting a starting current in the emitter of a further base emitter diode (40) to ensure a proper startup of the bandgap reference circuit.

Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify Harris and Marty to operate the startup circuit to inject a current into the emitter of the further base emitter diode as taught by Yu to ensure a proper startup of the bandgap reference circuit.

8. Claims 32 and 37 are rejected under 35 U.S.C. 103(a) as being unpatentable over Harris (US 6,362,612) and Marty (US 6,445,167) in view of King et al (US 5,471,131).

Harris and Marty disclose the claimed subject matter in regards to claim 28 supra except for a correction circuit for offsetting a voltage drop in the bandgap circuit.

King et al teaches using a correction circuit for correcting a voltage drop in a bandgap circuit.

Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify Harris and Marty to include a correction circuit for correcting a voltage drop in the bandgap reference circuit in order to produce the proper voltage at the output of the reference circuit as taught by King et al.

Art Unit: 2838

9. Claims 38 and 39 are rejected under 35 U.S.C. 103(a) as being unpatentable over Harris (US 6,362,612) in view of Roh (US 6,509,726) and further in view of May (US 6,362,605).

Harris discloses a bandgap reference circuit having a current source (M2); a circuit branch (R2, Q2) with positive and negative temperature coefficients as claimed; further base emitter diode (Q1); adjustment circuit (120).

However, Harris does not disclose a startup circuit and does not disclose a cellular telephone with analog to digital circuitry and regulation circuitry.

Roh, figure 2, teaches that it is old and well known to provide a reference voltage generating circuit including a startup circuit (30) connected to the input of an adjustment circuit (12) for ensuring proper startup of the bandgap reference circuit.

May teaches an integrated circuit for a cellular telephone comprising regulation circuitry and a bandgap circuit; and furthermore, May discloses analog to digital circuitry for converting analog signals to digital signals to be used by the integrated circuitry.

Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify Harris to include a startup circuit to ensure the proper startup of the bandgap reference circuit as taught by Roh; and it would have been obvious to modify Harris and Roh to include analog to digital circuitry and regulation circuitry to be used in a cellular telephone in order to convert and regulate analog signals into digital signals to be used by the cellular telephone integrated circuitry for proper operation of the telephone by providing proper regulated current and voltages to the circuitry.

Art Unit: 2838

10. Claims 40 and 41 are rejected under 35 U.S.C. 103(a) as being unpatentable over Harris (US 6,362,612) in view of Marty (US 6,445,167) and further in view of May (US 6,362,605).

Harris discloses a bandgap reference circuit having a current source (M2); a circuit branch (R2, Q2) with positive and negative temperature coefficients as claimed; further base emitter diode (Q1); adjustment circuit (120).

However, Harris does not disclose a startup circuit and does not disclose a cellular telephone with analog to digital circuitry and regulation circuitry.

Marty a regulator circuit including a startup circuit (20) connected to the output of an adjustment circuit (5) for ensuring proper startup of the regulator circuit.

May teaches an integrated circuit for a cellular telephone comprising regulation circuitry and a bandgap circuit; and furthermore, May discloses analog to digital circuitry for converting analog signals to digital signals to be used by the integrated circuitry.

Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify Harris to include a startup circuit to ensure the proper startup of the bandgap reference circuit as taught by Marty; and it would have been obvious to modify Harris and Marty to include analog to digital circuitry and regulation circuitry to be used in a cellular telephone in order to converter and regulate analog signals into digital signals to be used by the cellular telephone integrated circuitry for proper operation of the telephone by providing proper regulated current and voltages to the circuitry.

Art Unit: 2838

11. Claims 42 and 43 are rejected under 35 U.S.C. 103(a) as being unpatentable over Harris (US 6,362,612), Marty (US 6,445,167) and May (US 6,362,605) in view of King et al (US 5,471,131).

Harris, Marty and May disclose the claimed subject matter in regards to claim 40 supra except for a correction circuit for offsetting a voltage drop in the bandgap circuit.

King et al teaches using a correction circuit for correcting a voltage drop in a bandgap circuit.

Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify Harris, Marty and May to include a correction circuit for correcting a voltage drop in the bandgap reference circuit in order to produce the proper voltage at the output of the reference circuit as taught by King et al.

12. Claim 44 is rejected under 35 U.S.C. 103(a) as being unpatentable over Harris (US 6,362,612) in view of King et al (US 5,471,131).

Harris discloses a bandgap reference circuit having a current source (M2); a circuit branch (R2, Q2) with positive and negative temperature coefficients as claimed; further base emitter diode (Q1); adjustment circuit (120).

King et al teaches using a correction circuit for correcting a voltage drop in a bandgap circuit.

Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify Harris to include a correction circuit for correcting a voltage

Art Unit: 2838

drop in the bandgap reference circuit in order to produce the proper voltage at the output of the reference circuit as taught by King et al.

13. Claim 45 is rejected under 35 U.S.C. 103(a) as being unpatentable over Harris (US 6,362,612) and King et al (US 5,471,131) in view of May (US 6,362,605).

Harris discloses a bandgap reference circuit having a current source (M2); a circuit branch (R2, Q2) with positive and negative temperature coefficients as claimed; further base emitter diode (Q1); adjustment circuit (120).

King et al teaches using a correction circuit for correcting a voltage drop in a bandgap circuit.

May teaches an integrated circuit for a cellular telephone comprising regulation circuitry and a bandgap circuit; and furthermore, May discloses analog to digital circuitry for converting analog signals to digital signals to be used by the integrated circuitry.

Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify Harris to include a correction circuit for correcting a voltage drop in the bandgap reference circuit in order to produce the proper voltage at the output of the reference circuit as taught by King et al; and it would have been obvious to modify Harris and King et al to include analog to digital circuitry and regulation circuitry to be used in a cellular telephone in order to converter and regulate analog signals into digital signals to be used by the cellular telephone integrated circuitry for proper operation of the telephone by providing proper regulated current and voltages to the circuitry.

Allowable Subject Matter

14. Claims 25 and 26 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

15. The following is a statement of reasons for the indication of allowable subject matter:

Claims 25 and 26; prior art fails to disclose or suggest, inter alia, a bandgap reference circuit having a start circuit with an output connected to one of the inputs of the adjustment circuit for preventing operation in one of the operating states and wherein the start circuit has an output connected to the output of the adjustment circuit for applying a bias voltage to the output of the adjustment circuit.

Conclusion


16. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. US 6,650,175 Messenger disclose a reference voltage generating device with a start circuit connected at the output of an amplifier; US 4,931,718 Zitta discloses a voltage reference circuit with a start circuit connected at the output of an amplifier.

Art Unit: 2838

17. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Gary L. Laxton whose telephone number is (571) 272-2079. The examiner can normally be reached on Monday thru Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Michael Sherry can be reached on (571) 272-2084. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).


Gary L. Laxton
Primary Examiner
Art Unit 2838
10/3/05